Key Features & Benefits

- **Self-adjusting compression and vacuum pressures**: To mimic the gentle and soft positive peristaltic compression experienced during natural breastfeeding.
- **Temperature control**: Enhances comfort during pumping sessions, allowing mothers to customize the temperature according to their preferences and needs.
- **Artificial intelligence control system**: To adjust pump pressure in real-time, synchronizing with the milk production and the mother's comfort level.
- **Portable and convenient design**: Compact and user-friendly design allows for easy transportation and discreet usage, to maintain their breastfeeding routines even while on the go.

Potential Applications

- **Breastfeeding support**: Provides a safe, comfortable, and efficient solution for breastfeeding mothers, helping them maintain a consistent milk supply and support their breastfeeding goals.
- **Postpartum mental health**: By offering a more comfortable and effective pumping experience, the breast pump may help reduce the risk of postpartum depression and improve overall mental well-being for mothers.
- **Bonding and infant health**: The personalized pumping experience, including the option for personalized infant's video and sound recording, may enhance the milk let-down reflex and promote bonding between mothers and infants.

Fig 1.
The BP includes 4 main components:
- a) the pressure generator combines peristaltic vacuum and positive pressure to replicate the mechanism of infant feeding on the mother's breast
- b) the artificial intelligent control system is used to adjust pump pressure in synchrony to the milk production and mother's comfort level
- c) the temperature control system provides comfort with heating and cooling solution
- d) personalized infant's video and sound recording helps with milk let down reflex